

## ABSTRACT

The present invention relates to an inorganic intercalating nano-catalyst with high activity for the copolymerization of carbon dioxide and epoxide. Said catalyst was prepared by intercalating zinc dicarboxylate into layered silicate. The zinc dicarboxylates were synthesized from zinc oxide and dicarboxylic acids. The silicate was activated at 600-1000 °C in a muffle furnace for a period 2~10 h prior to intercalation. Zinc dicarboxylates were dissolved in strong polar solvents under pH value from 1.0 to 4.0. Calcinated acidic silicate was introduced into the reaction system to perform the intercalation 30~120 minutes at the temperature from room temperature to 80 °C. The crystal of the intercalating nano-catalysts was improved by refluxing in weak polar solvent followed by removing the solvent.